

Notice of Allowability

Application No.

10/089,926

Examiner

Manav Seth

Applicant(s)

KONDO ET AL.

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/31/2002.
2. ☒ The allowed claim(s) is/are 1-78.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 06/02/2005.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 04/05/2002
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☒ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 06022005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

✓ EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's attorney of record, Mr. William Frommer, on 06/06/2005, at 2:25 p.m., and on 06/08/2005 at 1:30 p.m. Examiner's amendment in the claims:

Drawings

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant:

(a) Label drawings 1-2, 3A-B, 4A-B, 5-9 as "PRIOR ART".

(b) **Drawing 19:** Change the number assigned to the element "Class Code Generation" from 105 to 106. Change the number assigned to the figure from 104 to 105.

(c) **Drawing 22:** Change the number assigned to the element "DELAY CIRCUIT" from 165 to 164.

An additional sheet, representing examiner's amendment on the drawings 1-9, 19 and 22, has been attached to this office allowance notice. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes..

Specification

3. The following changes to the specification have been approved by the examiner and agreed upon by applicant:

(a) On page 28, line 16 (6th last line on the page 28) of the specification recites "**Fig.17** shows an exemplary structure of the storage picture.....".

Examiner's Amendment: Replace "**Fig. 17**" by "**Fig. 14**".

Amended Specification: "**Fig.14** shows an exemplary structure of the storage picture.....".

(b) On page 32, last line on the page 32 of the specification recites "**161-1 and to a delay circuit 164**, whilst the storage picture from the storage picture.....".

Examiner's Amendment: Replace "**161-1**" by "**16-1**" and delete "**and to a delay circuit 164**".

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Amended Specification: “16-1 whilst the storage picture from the storage picture”.

(c) On page 33, replace: “161-1” by “16-1”, “161-2” by “16-2”, “161-3” by “16-3”, “161-4” by “16-4”, “161-5” by “16-5”.

(d) On page 36, line 18 (4th last line on the page 36) of the specification recites “the input picture is sent to a frame memory 181-1”.

Examiner's Amendment: Replace “181-1” by “18-1”.

Amended Specification: “the input picture is sent to a frame memory 18-1”.

(e) On page 36, line 21 (last line on the page 36) of the specification recites “the frame memories 181-1 to 181-5 basically operate”.

Examiner's Amendment: Replace “181-1 to 181-5” by “18-1 to 18-5”.

Amended Specification: “the frame memories 18-1 to 18-5 basically operate”.

(f) On page 37, line 1 of the specification recites “memories 161-1 to 161-5 of fig. 17 and hence the”.

Examiner's Amendment: Replace “161-1 to 161-5” by “16-1 to 16-5”.

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Amended Specification: “memories 16-1 to 16-5 of fig. 17 and hence the”.

(g) On page 37, line 4 of the specification recites “based on the picture data of the frame sent from the frame memories 181-1 to 181-5,”.

Examiner’s Amendment: Replace “181-1 to 181-5” by “18-1 to 18-5”.

Amended Specification: “based on the picture data of the frame sent from the frame memories 18-1 to 18-5,”.

(h) On page 37, line 9 of the specification recites “.....supplied from the frame 181-3 as a subject pixel,”.

Examiner’s Amendment: Replace “181-3” by “18-3”.

Amended Specification: “.....supplied from the frame 18-3 as a subject pixel,”.

(i) On page 37, lines 11-12 of the specification recites “memory 181-1, frame Fn-1 from the frame memory 181-2, frame Fn+1 from the frame memory 181-4 and the frame Fn+2 from the frame memory 181-5,”.

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Examiner's Amendment: Replace "181-1" by "18-1", replace "181-2" by "18-2", replace "181-4" by "18-4", replace "181-5" by "18-5".

Amended Specification: "memory 18-1, frame Fn-1 from the frame memory 18-2, frame Fn+1 from the frame memory 18-4 and the frame Fn+2 from the fame memory 18-5,".

(j) On page 37, line 21 (last line on page 37) of the specification recites "the pixel information from the area extraction unit 197, the".

Examiner's Amendment: Replace "197" by "107".

Amended Specification: "the pixel information from the area extraction unit 107, the".

(k) On page 42, line 3 of the specification recites "Fig. 22 shows an illustrative structure of the".

Examiner's Amendment: Replace "Fig. 22" by "Fig. 23".

Amended Specification: "Fig. 23 shows an illustrative structure of the".

(l) On page 42, line 10 of the specification recites "which is routed to the class code generating unit 106".

Examiner's Amendment: Replace “106” by “195”.

Amended Specification: “which is routed to the class code generating unit 195”.

Claims

4. The following changes to the claims have been approved by the examiner and agreed upon by applicant:

(a) Replace **Claim 1** limitation “first extraction means for extracting the first pixel information from both said storage picture and said first picture, acquired by said acquisition means, based on the position of a subject pixel of said second picture” recited in lines 9-11 of page 77, by, -- first extraction means for extracting the first pixel information from both said storage picture and said first picture, acquired by said acquisition means, based on a position in said second picture to be generated of a subject pixel located in said second picture--.

(b) Replace **Claim 14** limitation “first extraction step for extracting the first pixel information from both said storage picture and said first picture, acquired by said acquisition step, based on the position of a subject pixel of said second picture” recited in lines 13-15 of page 80, by, -- first extraction step of extracting the first pixel information from both said

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storage picture and said first picture, acquired by said acquisition step, based on a position in said second picture to be generated of a subject pixel located in said second picture--.

(c) Replace Claim 27 limitation “first extraction step for extracting the first pixel information from both said storage picture and said first picture, acquired by said acquisition step, based on the position of a subject pixel of said second picture” recited in lines 15-17 of page 83, by, -- first extraction step of extracting the first pixel information from both said storage picture and said first picture, acquired by said acquisition step, based on a position in said second picture to be generated of a subject pixel located in said second picture--.

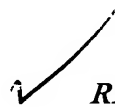
(d) Replace Claim 40 limitation “first extraction means for extracting said first picture information from both said storage picture and said pupil picture generated by said generating means, based on the position of said subject pixel of teacher data equivalent to said second picture” recited in lines 5-7 of page 87, by, -- first extraction means for extracting first picture information from both said storage picture and said pupil picture generated by said generating means, based on a position of a subject pixel located in teacher data to be generated where said teacher data is equivalent to said second picture--

(e) Replace Claim 53 limitation “first extraction step of extracting said first picture information from both said storage picture and said pupil picture, generated by said generating step, based on the position of said subject pixel of teacher data equivalent to said second picture” recited in lines 7-9 of page 90, by, -- first extraction step of extracting first

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picture information from both said storage picture and said pupil picture generated by said generating step, based on a position of a subject pixel located in teacher data to be generated where said teacher data is equivalent to said second picture--.

(f) Replace **Claim 66** limitation “first extraction step of extracting said first picture information from both said storage picture and said pupil picture, generated by said generating step, based on the position of said subject pixel of teacher data equivalent to said second picture” recited in lines 9-11 of page 93, by, -- first extraction step of extracting first picture information from both said storage picture and said pupil picture generated by said generating step, based on a position of a subject pixel located in teacher data to be generated where said teacher data is equivalent to said second picture--.

**REASONS FOR ALLOWANCE**

5. Claims 1-78 are allowed.
6. The following is an examiner's statement of reasons for allowance:

The instant invention is an apparatus, method and recording medium that **generates a second picture from a first picture, the second picture being of higher picture quality than the first picture which further includes an acquisition step of acquiring the first picture, a storage step of storing the first picture acquired by the acquisition step using a storage processing means, which further performs a storage processing step of storing a new first picture acquired by the acquisition step at a position registering with the first picture stored at the storage step to permit a storage picture of the first picture to be stored at the storage step where this step of storage processing reduces the noise in the still**

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picture portion by summing the input picture and the storage picture preceding the input picture by one frame, at a preset proportion (page 29, 3rd paragraph). The instant invention further recites **the first extraction means** which provides a first extraction step of extracting the first pixel information from both the storage picture and the first picture, acquired by the acquisition step, based on the position of subject pixel of the second picture to be generated, which is further followed by a **feature value detection means** which provides the steps for detecting a preset feature value from said first pixel information, a **classification means** which provides a classification step for classifying said subject pixel to one of the plurality of classes based on said feature value. The instant invention further recites a **second extraction means** for extracting the second pixel information from both said storage picture and said first picture, followed by a **generating means** which provides the generating step of generating the subject pixel by the second pixel information in accordance with a generating system preset corresponding to the classes classified by the classification step. The closest prior art Kondo et al, U.S. Patent No. 6,516,088, provides an image information converting apparatus that allows the circuit scale to be reduced and **the image quality to be prevented from deteriorating**, which converts a composite color image signal composed of pixels into a component color image signal composed of a plurality of components, comprising a first area extracting circuit (101), a second area extracting circuit (105), a feature value detection means (102), a classification means (103) and a generating means (106) (figure 3; col. 1, lines 60-67; Abstract). Kondo et al, prior art, does not teach a storage processing means to store the first image signal but rather inputs the same image signal into both first (101) and second (105) extraction means besides

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inputting the stored and first input image signal to both extraction means. The closest prior art does not teach the limitations:

(a) “storing a new first picture acquired by said acquisition means at a position registering with said first picture stored in said storage means to permit a storage picture of said first picture to be stored in said storage” recited in independent claims 1, 14 and 27.

(b) “causing a new pupil picture, generated by said generating means, to be stored at a position registering with said pupil picture stored in said storage means for causing a storage picture of said pupil picture to be stored in said storage means” as recited in independent claims 40, 53 and 66.

These features, in combination with the other elements of the claims are not disclosed or suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

CONTACT INFORMATION

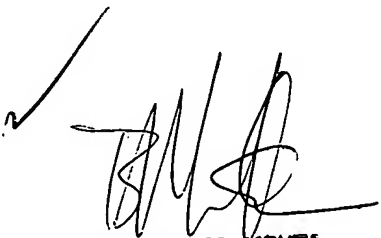
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manav Seth
Art Unit 2625
June 16, 2005



BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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REPLACEMENT SHEET

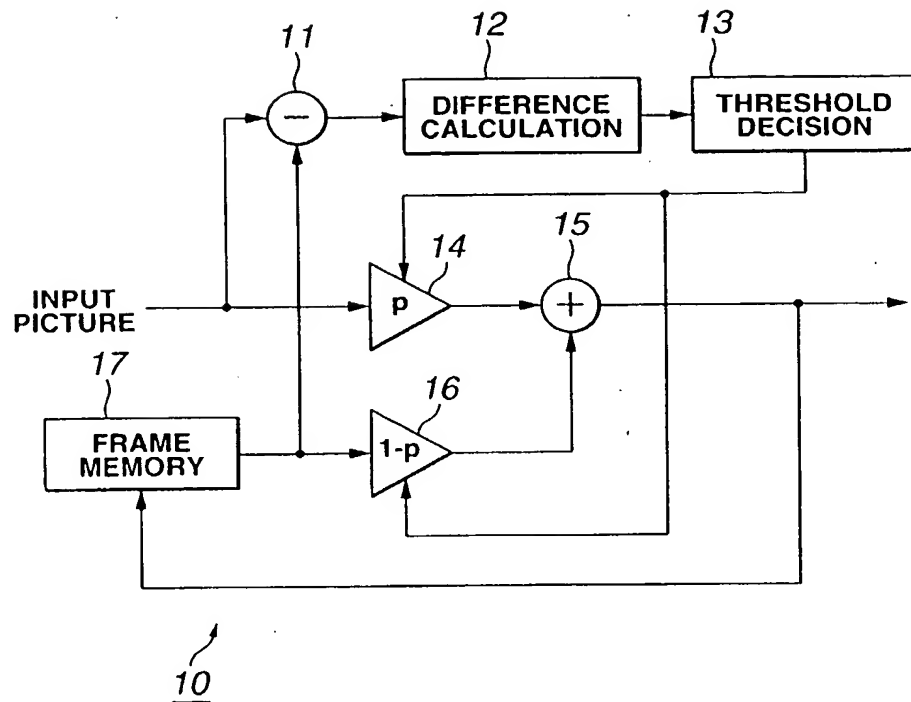


FIG.1

PRIOR ART

REPLACEMENT SHEET

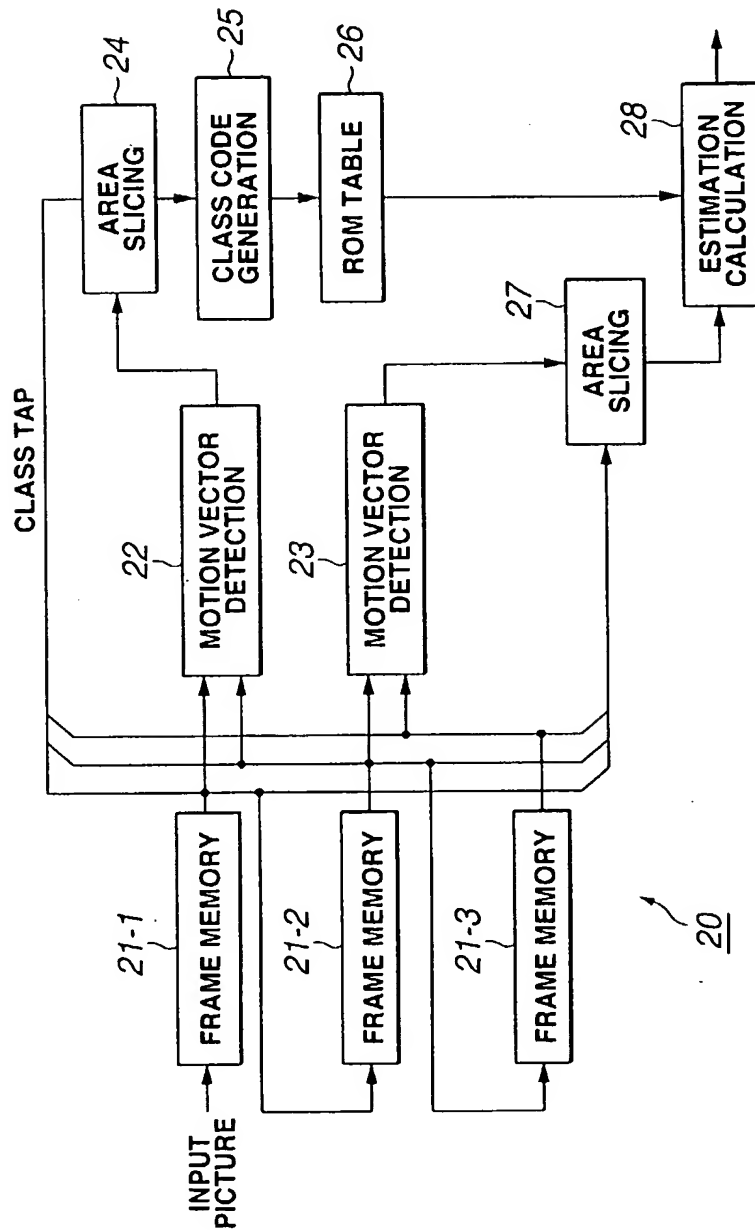


FIG.2

"PRIOR ART"

FIG.3A



FIG.3B

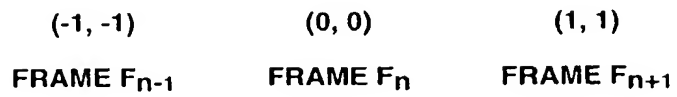
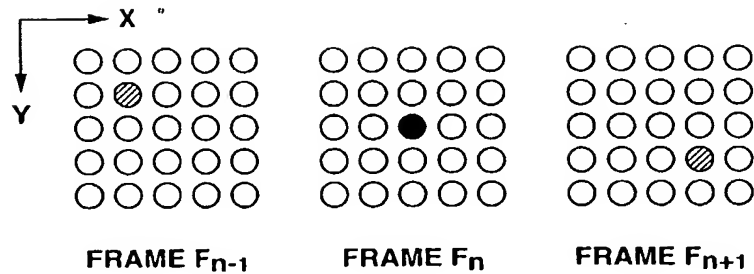


FIG.3C



" PRIOR ART "

FIG.4A

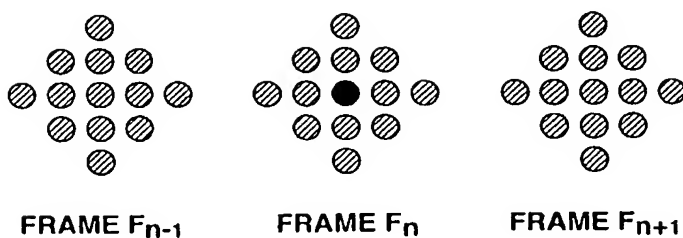


FIG.4B

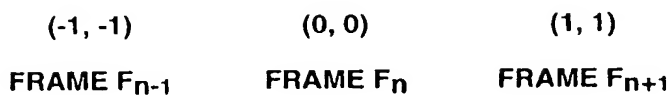
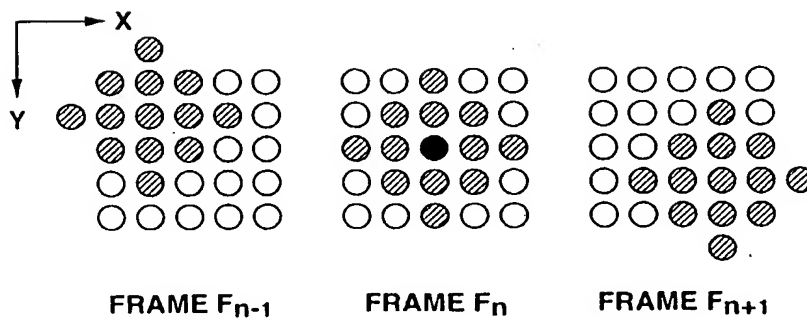


FIG.4C



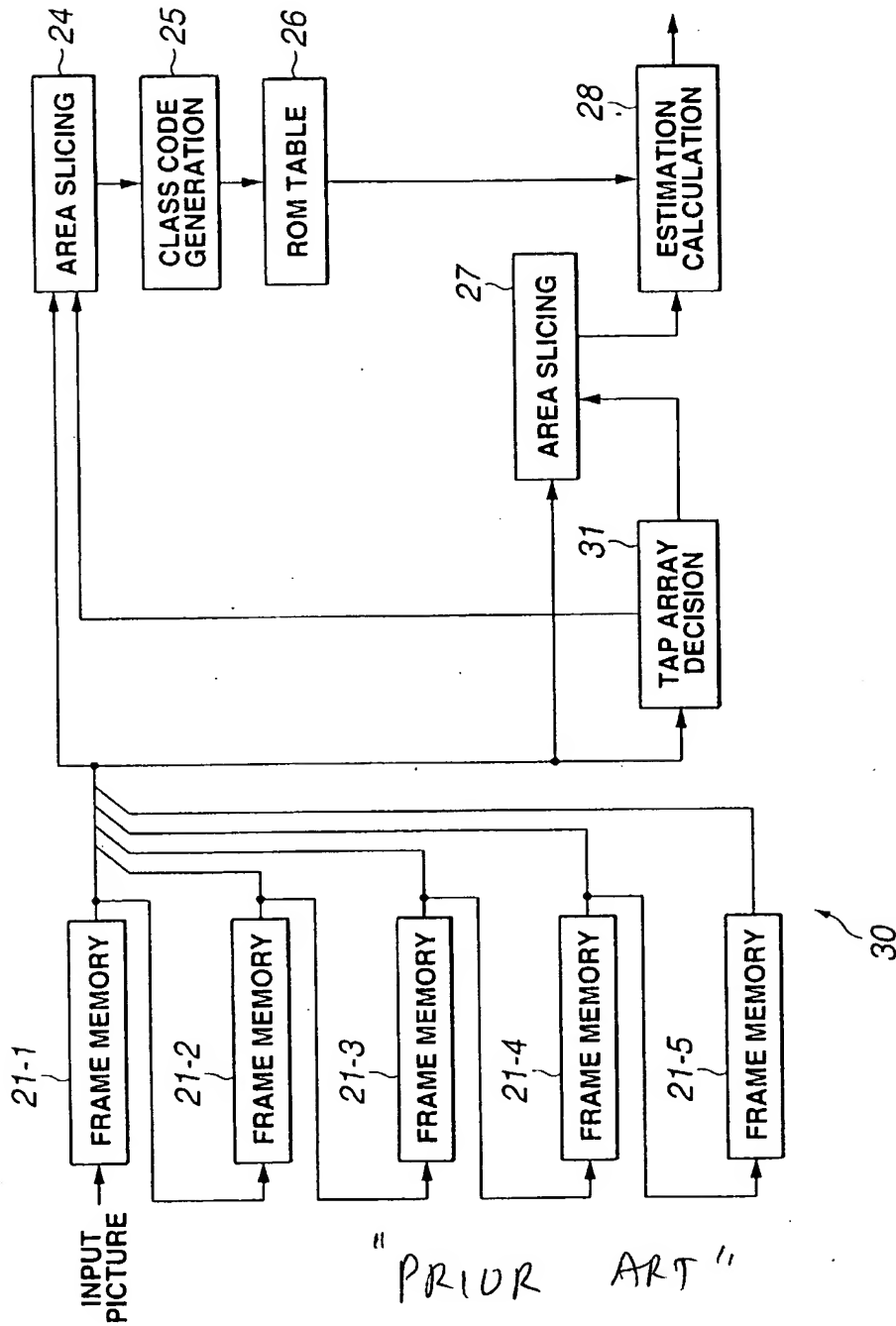


FIG.5

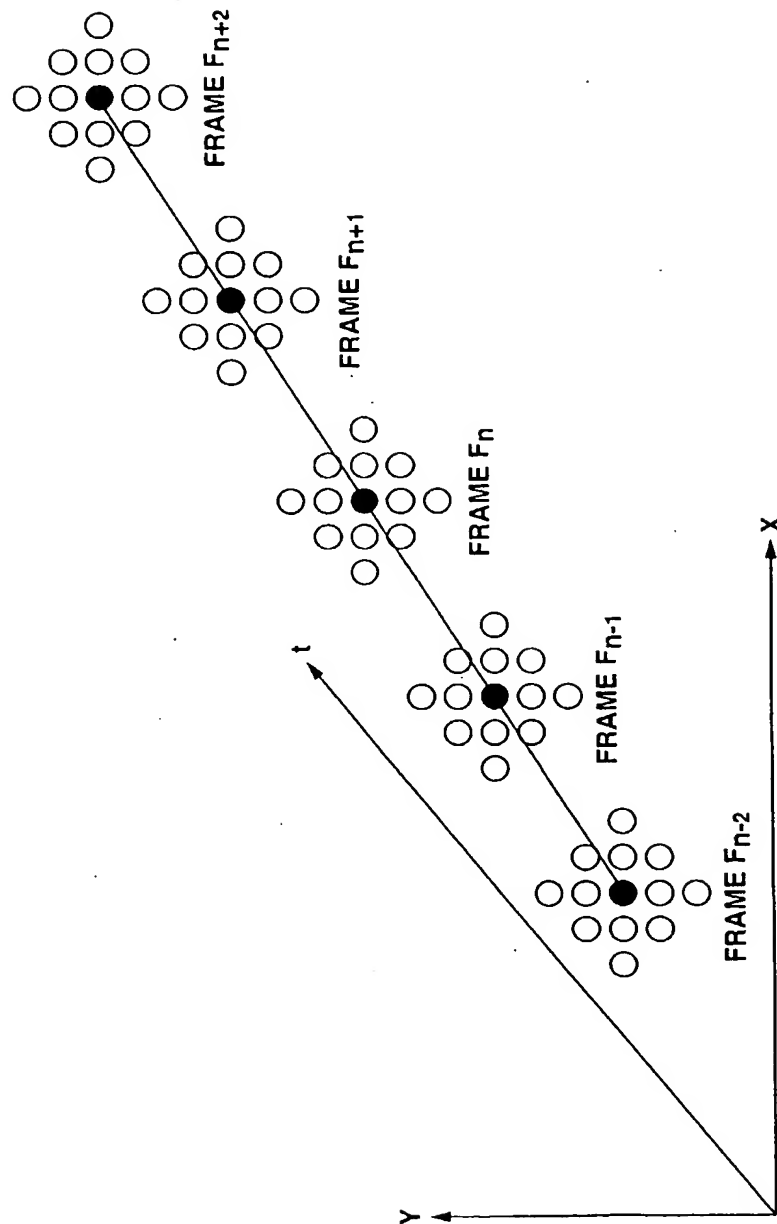


FIG.6

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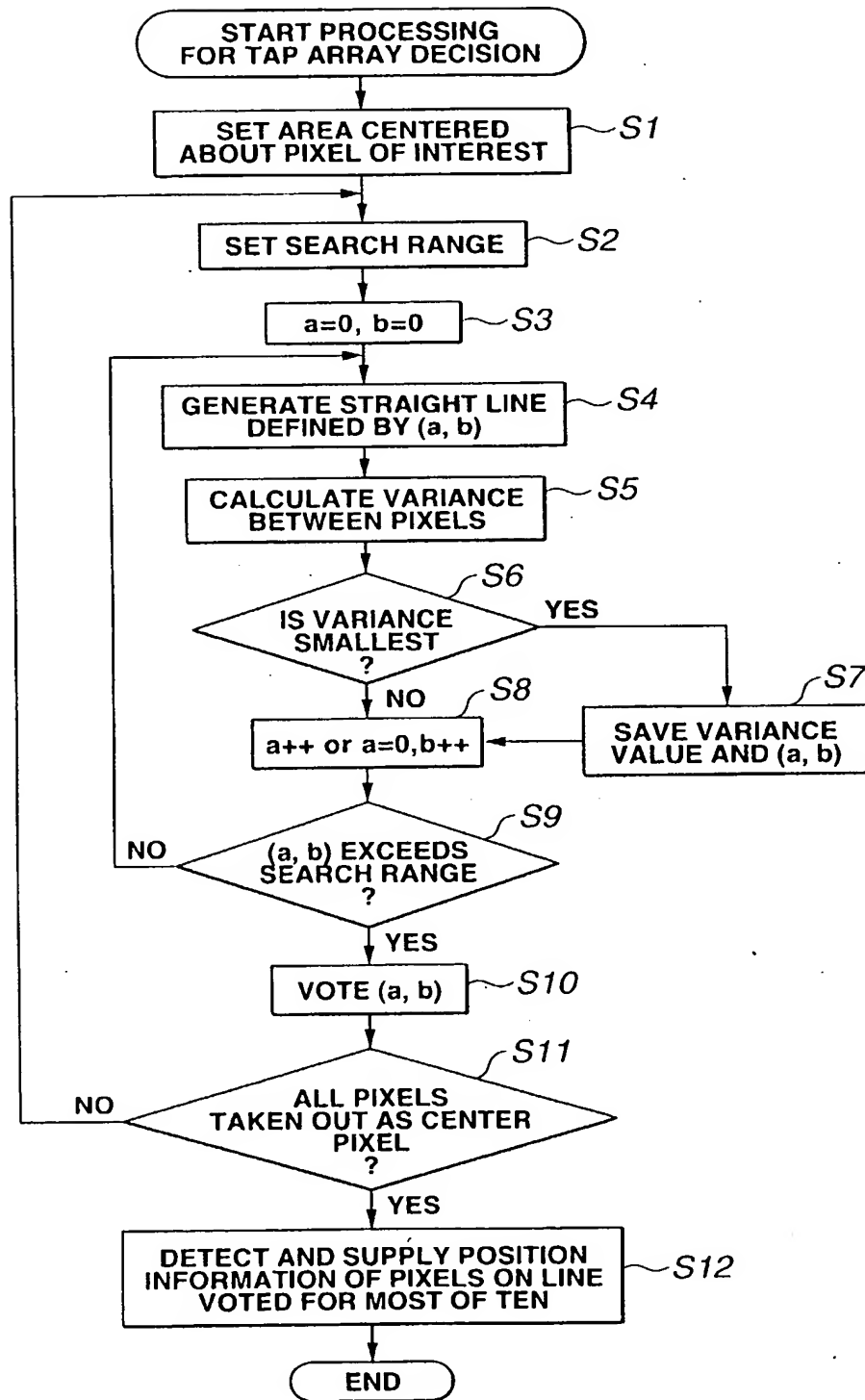


FIG.7

"PRIOR ART"

"REPLACEMENT SHEET"

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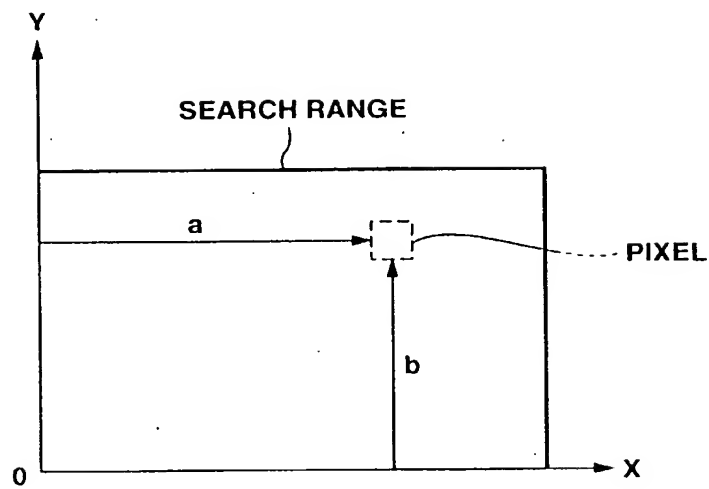
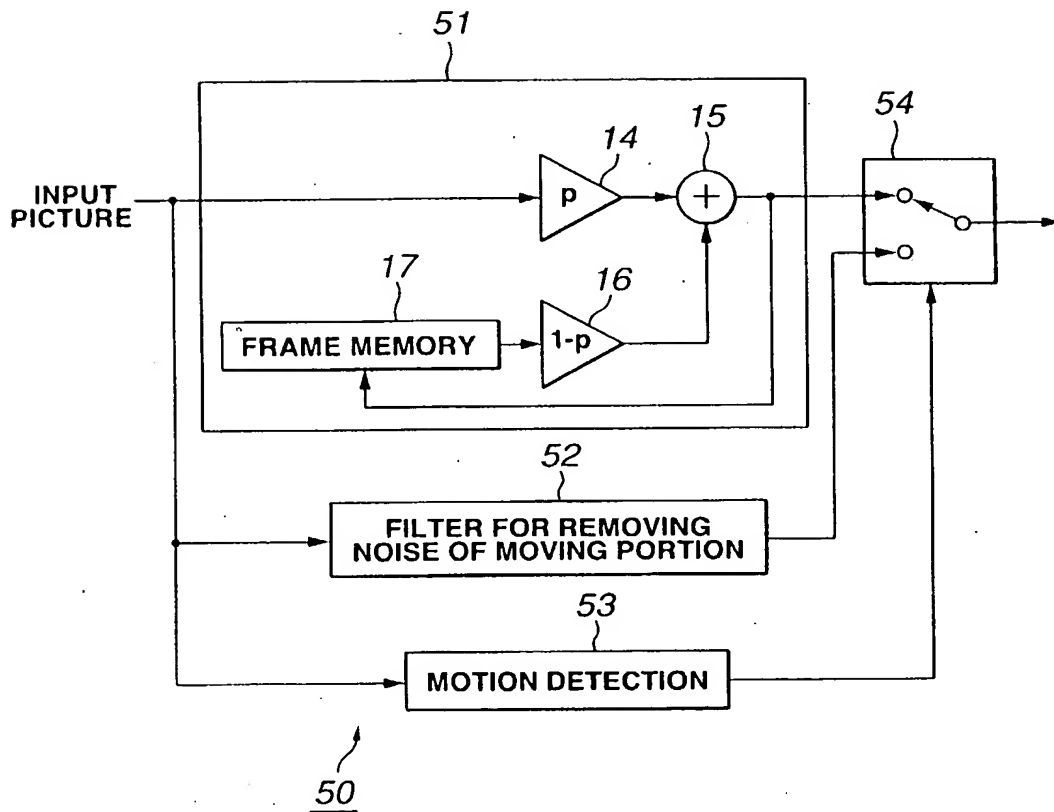


FIG.8

"PRIOR ART"

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**FIG.9**

"PRIOR ART"

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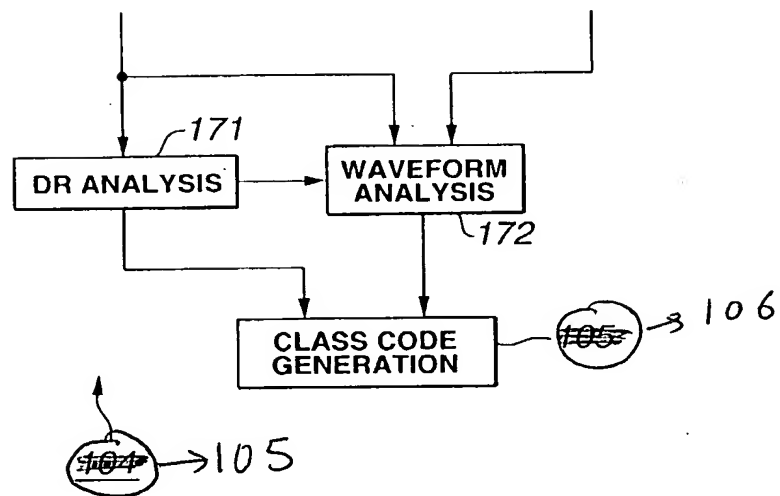


FIG.19

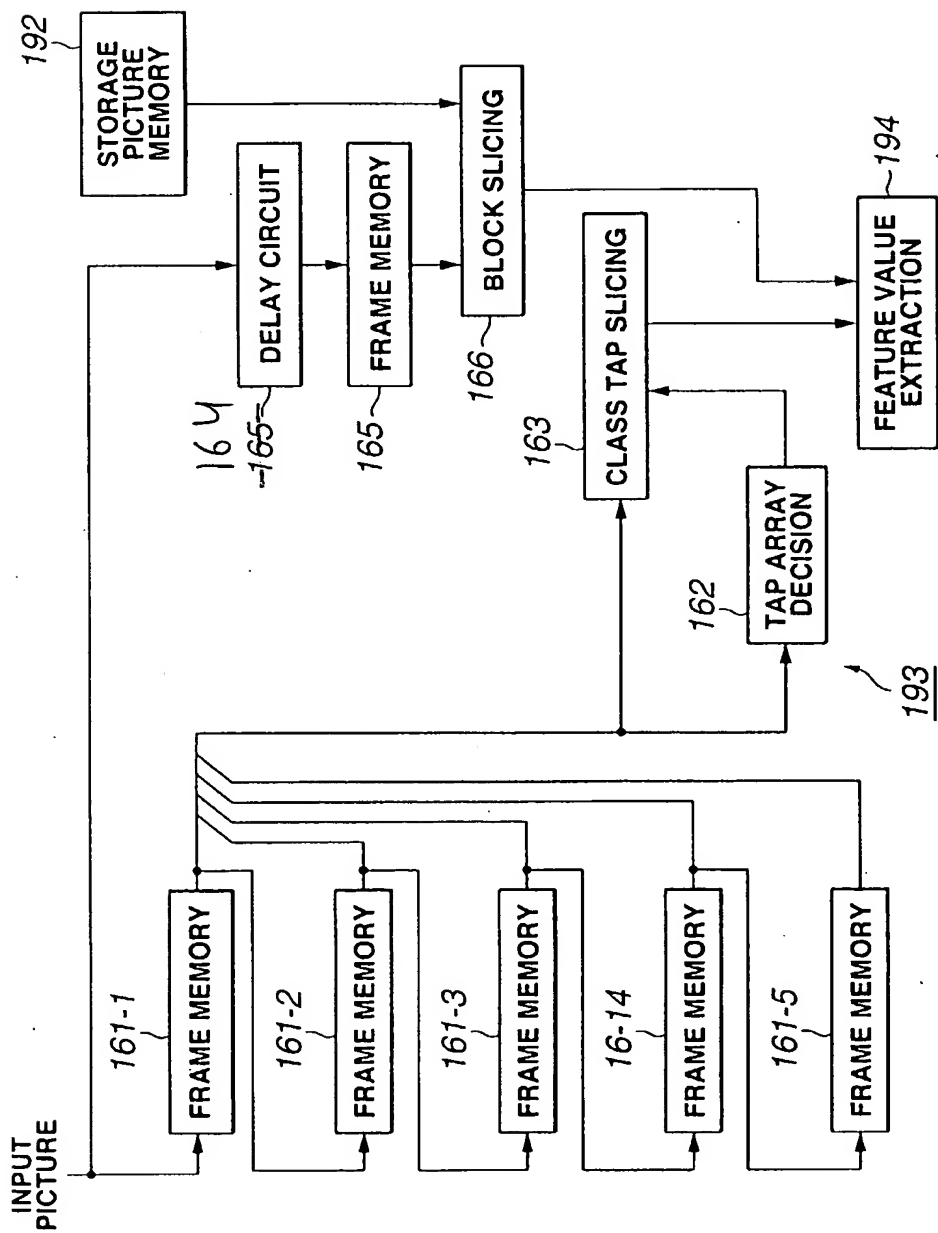


FIG.22